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March 23, 2012

VIA ELECTRONIC FILING
Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: WT Docket No. 11-69/ET Docket No. 09-234

***Ex Parte* Presentation**

Dear Ms. Dortch:

On March 21, 2012, Andrew Schwartz, Director, Radio Communications & Security Technologies, New Jersey Transit Corporation ("NJ Transit"), Jose M. Martin, Executive Vice President & Chief Operating Officer, PowerTrunk, Inc. ("PowerTrunk"), Patrick D. McPherson and William K. Keane, counsel for PowerTrunk, Jeffrey Marks, Senior Counsel – Director Regulatory Affairs, Public Affairs Americas, Alcatel-Lucent, and undersigned counsel for NJ Transit, met with the staff of the Public Safety and Homeland Security Bureau listed below in connection with the above-identified proceedings.

The purpose of the meeting was to confirm NJ Transit's ability to deploy PowerTrunk's 20 kHz bandwidth 4-slot TDMA equipment on NJ Transit's 800 MHz channels, an issue raised implicitly in the March 16, 2012 *ex parte* letter from Harris Corporation ("Harris") and explicitly in Harris's protest of NJ Transit's award of a contract to Alcatel-Lucent, whose proposal includes the use of PowerTrunk equipment.[1]

[1] The award was in response to NJ Transit RFP No. 11-018 – Design & Build a Statewide Land Mobile Radio Network ("RFP"). Specifically, the RFP called for a proposal for a Digital Land Mobile Radio ("D-LMR") system.

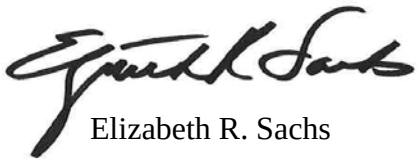
PowerTrunk described the history of the FCC certification of the equipment in question and noted that it was found by FCC-approved labs to be compliant with applicable Part 90 technical specifications. In particular, PowerTrunk explained how the equipment complied with the emission mask set out in FCC Rule Section 90.210(b) and showed the attached schematic to the staff present at the meeting. Based on its compliance with current FCC technical specifications, PowerTrunk, NJ Transit and Alcatel-Lucent observed that the equipment in question does not fall within the definition of Terrestrial Trunked Radio ("TETRA") equipment in the FCC's Orders in these proceedings. TETRA equipment is defined as equipment that does not meet the requirements of 47 C.F.R. §§ 90.209(b)(5), 90.210(b), (c), (g) and that complies with the European Technical Standards Institute ("ETSI") standard for TETRA equipment.[2] By contrast, the PowerTrunk equipment does comply with the referenced FCC rules, but does not conform to the ETSI TETRA standard.

The parties discussed the fact that NJ Transit provides transportation services and does not currently have interoperability with other licensees on its 800 MHz channels, which are used exclusively for internal transit-related communications. The NJ Transit police do maintain interoperability with other public safety entities using VHF channels. The parties also discussed the FCC's query whether TETRA radios should be required to operate with conventional FM on NPSPAC mutual aid channels if TETRA technology is authorized in the Public Safety Pool, as well as the various mechanisms by which interoperability is accomplished today among systems with different architectures.[3]

This letter is being filed electronically, in accordance with Section 1.1206(b) of the Commission's Rules, 47 C.F.R. § 1.1206(b), for inclusion in the record in these proceedings.

Kindly refer any questions or correspondence regarding this matter to the undersigned.

Very truly yours,



Elizabeth R. Sachs

Attachment

cc: Michael Wilhelm
William D. Lane
Zenji Nakazawa (attended by telephone)
Roberto Mussenden
Brian Marenco
Dana Zelman

[2] *See Order on Clarification*, WT Docket No. 11-69, 26 FCC Rcd 13360 at n. 4 (2011).
[3] *See Notice of Proposed Rule Making and Order*, WT Docket No. 11-69, 26 FCC Rcd 6503 at ¶¶ 14-15 (2011).

MODULATION SCHEMES SPECIFICATION

(NOTE: EXTRACT OF INTERNAL DESIGN SPECIFICATION OF PRODUCTS HTT-500, MDT-400 AND BSR75)

1. DEFINITION

PowerTrunk Part 90 compliant equipment, 4-slot TDMA with emission designators 20K0xxx, uses the following equation for the modulated signal at carrier frequency fc:

$$M(t) = \mathrm{Re}\left\{ s(t) * e^{j(2*\pi*f_c*t+\phi_0)} \right\}$$

Where:

ϕ_0 :Arbitrary phase

S(t) is the complex envelope of the modulated signal defined as:

$$s(t) = \sum_{k=0}^{K} S(k) * g(t - t_k)$$

Where:

K: Maximum number of symbols.

T: Symbols durations.

t_k=k*T is the symbol time corresponding to modulation symbol S(k).

g(t) is the ideal symbol waveform, obtained by the inverse Fourier Transform of RRC (Root-Raised Cosine) spectrum G(f) with roll-off factor α =0.2.This RRC filter is an audio low pass filter.

$$G(f) = 1 \qquad for \qquad |f| \le \frac{1-\alpha}{2T}$$

$$G(f) = \sqrt{0.5 * \left(1 - \sin\left(\pi\left(\frac{2*|f|*T-1}{2*\alpha}\right)\right)\right)} \qquad for \qquad \frac{1-\alpha}{2T} \le |f| \le \frac{1+\alpha}{2T}$$

$$G(f) = 0 \qquad for \qquad |f| \ge \frac{1+\alpha}{2T}$$

S(k): Modulation symbol shall result from a differential encoding. S(k) is obtained applying the phase transition D_Φ (k) to the previous modulation symbol S(k-1):

$$S(k) = S(k-1) * e^{j*D_\phi(k)}$$

$$S(0) = 1$$

Modulation Bits		Phase Transitions
B(2k-1)	**B(2k)**	**D_Φ (k)**
1	1	-3*π / 4
0	1	+3*π / 4
0	0	+ π / 4
1	0	- π / 4

Table I. Phase Transition for π/4-DQPSK

The next expression is obtained from the previous equations:

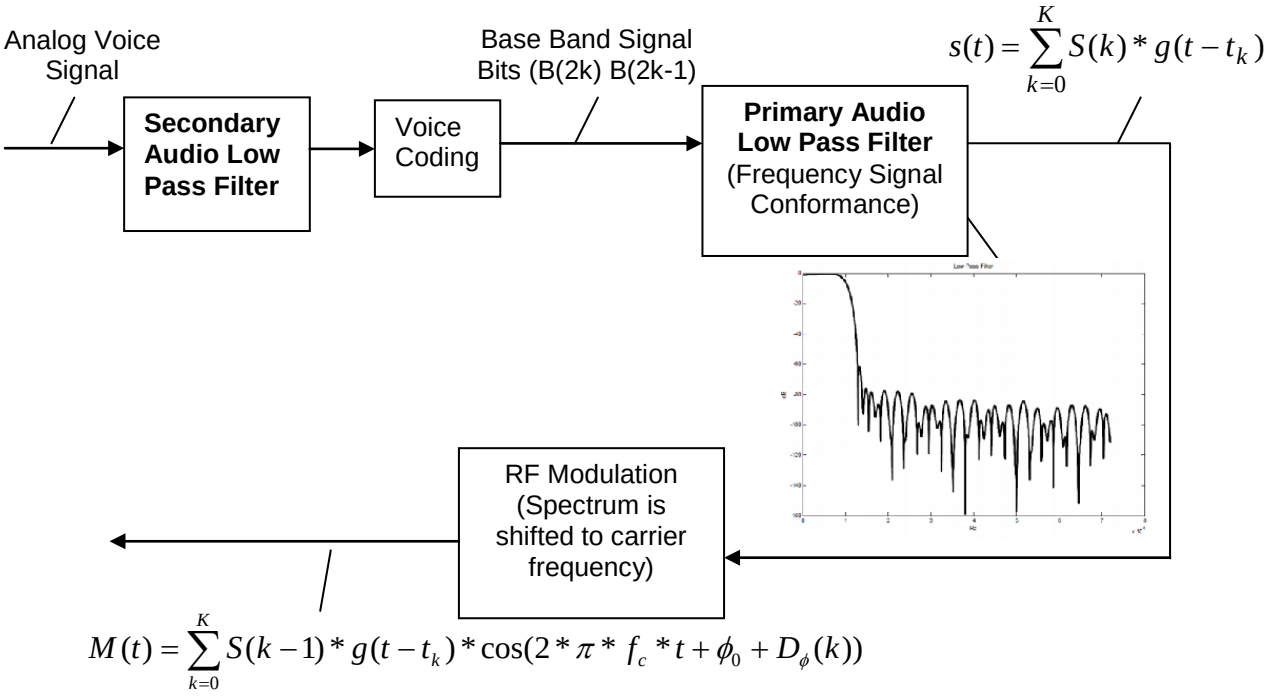
$$M(t) = \mathrm{Re}\left\{ s(t) * e^{j(2*\pi* f_c *t+\phi_0)} \right\} = \mathrm{Re}\left\{ \sum_{k=0}^{K} S(k-1) * e^{j*D_\phi(k)} * g(t-t_k) * e^{j(2*\pi* f_c *t+\phi_0)} \right\} =$$

$$= \sum_{k=0}^{K} S(k-1) * g(t-t_k) * \cos(2*\pi* f_c *t + \phi_0 + D_\phi(k))$$

2. MODULATION SCHEME

The modulation scheme including the signal previously described is shown below:

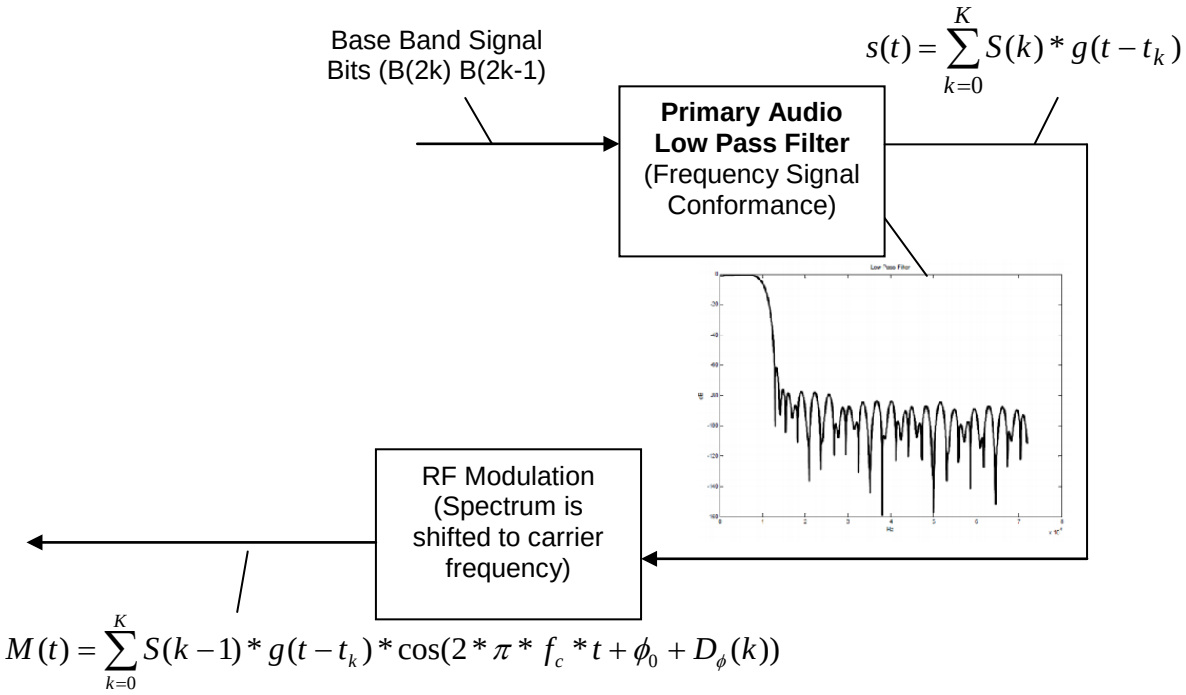
a) Mobile and portable transmitters:



In order to meet FCC Part 90 Occupied Bandwidth and Emission Mask limitations specified in Sections 90.209 and 90.210, the **Primary Audio Low Pass Filter** is based on the TETRA standard Root Raised Cosine (RRC) filter with a roll-off factor of 0.35, but adapted for FCC requirements with a roll-off factor of 0.2. This **Primary Audio Low Pass Filter** is implemented in mobiles using CML Base Band Processor part number CMX980A. This **Primary Audio Low Pass Filter** is implemented in portables using CML Base Band Processor part number CMX981.

The **Secondary Audio Low Pass Filter** is also necessary in order to adequately provide the voice signal to the next signal processing blocks and avoid malfunctions. This filter is implemented in mobiles using Texas Instruments Codec part number TLV320AIC12 and in portables using STMicroelectronics Codec part number STw5093.

b) Base station / repeater:



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